feet on the 19th. Heavy rains on February 5 and 6 over the Black Warrior watershed and that of the Tombigbee south of Columbus, Miss., caused some flooding in the former stream from Tuscaloosa, Ala., southward and, in the latter from Demopolis, Ala., southward. Slight flooding also occurred in the Pearl and Pascagoula Rivers. The losses from these floods as shown in the table below were only slight or moderate.

Mississippi River system.—The stages during the month were, as a rule, unusually low except in portions of the Ohio watershed where some flooding took place. At Omaha, Nebr, the Missouri River reached its lowest February stage of record, 2.1 feet on the 29th. The river stage at St. Louis, Mo., was continuously below zero on the gage from September 19, 1939, to March 3, 1940, inclusive, which is the longest period of continuous subzero gage readings of record (1861 to date). The previous longest period was from September 7, 1937, to January 25, 1938, inclusive. In the lower Mississippi, subzero stages persisted at Vicksburg, Miss., from September 8, 1939, to February 19, 1940, which has never been equalled previously for duration. The low stages at Greenville, Miss., —5.9 feet, February 1, and at Vicksburg, Miss., —6.95 feet, February 3, are the lowest stages of record at those points. Following are a number of low stages during the past fall and winter resulting from drought conditions in the Mississippi watersheds:

River and station	Lowest stage, fall and winter, 1939–40	Previous lowest stage and date
MISSOURI RIVER		
Kansas City, Mo.[1]	0.4, Jan. 9	—2.7, Jan. 9, 1937.
ARKANSAS RIVER		
Little Rock, Ark	—1.9, Oct. 22[1]	—4.2, Aug. 22, 1934.
RED RIVER		
Shreveport, La	0.2, Nov. 8, 9	1.7, Sept. 13, 1936.
MISSISSIPPI RIVER		
Keokuk, Iowa	—3.4, Dec. 31, Jan. 2	—4.3, Jan. 3, 1934.
St. Louis, Mo	—6.1, Jan. 16	—5.5, Dec. 12, 1937.
Memphis, Tenn	—0.6, Oct. 25, 28	—2.7, Nov. 9, 1895.
Greenville, Miss	—5.9, Feb. 1	—4.2, Aug. 27, 1936.
Vicksburg, Miss	—6.95, Feb. 3	—6.5, Nov. 13, 1895.

[1] Ice reading. [2] And later dates.

Streams were generally frozen in northern sections, and floating ice was observed during the month in the Mississippi River as far south as White Castle, La., and in the Atchafalaya River, from the Mississippi, at Simmesport, La. Medium to heavy ice which reached Helena, Ark., on January 23, formed a gorge at that point on the 30th. The gorge moved out on February 4 and on the 6th the river was practically clear of ice and open to navigation.

Flood stage was exceeded at Parkers Landing, Pa., on the Allegheny River, where the water was backed up by an ice jam a short distance below that gage. The following report was submitted by the official in charge, Pittsburgh, Pa.:

A small ice jam formed in the Allegheny River at West Monterey, Pa., about 5 miles downstream from Parkers Landing on January 11, when ice from the upper river came down. This gorged ice held the river stage at Parkers Landing at a 10- to 14-foot stage during the remainder of January and the early part of February. Light to moderate rainfall and mild weather of February 10 and 11 brought some of the ice from the upper river out again, and piled it on top of the gorged ice below Parkers Landing, which by this time was frozen solid to a considerable depth. The additional ice closed the passages through the gorge, and quickly raised the water to a 24.4-foot stage at Parkers Landing.

At 5 p. m. of February 12, the stage was 14 feet, and by 8:30 p. m. the stage was 24.4 feet. The water and heavy cakes of ice covered the highway from the Highway Bridge at the upper end of the town to the lower end of the town a distance of about one-half mile. At the Parker end of the bridge, the ice was forced over the top of the guard rail, and completely closed the entrance to the bridge with ice as high as the rail. Water covered the first floors of most of the buildings in the town along the highway, and of the glass factory near the bridge. By midnight of the 12th the water had receded to 22.3 feet, leaving the entrance to the bridge and the highway covered with ice. From the 12th to the 16th the water level fluctuated each day around the 22-foot stage, dropping below 20 feet about 4:30 a. m. of the 16th.

Considering the high stage reached, the damage caused by the high water was small, due to the fact that it occurred in only a short stretch of the river, that practically everything that could be moved was raised up out of reach of the water. Telephone and telegraph lines were out of service for several hours during the night of February 12. The greatest item of expense was the cleaning up after the water receded, and removing the heavy ice from the highway in the town of Parkers Landing. The estimated total damage is $300.

At the end of the month there was considerable snow in the mountains and the northern portions of the Allegheny Basin, ranging in depth from 12 to 30 inches, while in the lowlands of the same basin the depths ranged from 3 to 7 inches. Over the lower 50 miles of the Monongahela the greater portion of the ground was covered with snow from an inch to several feet in depth. This snow was of high water content equivalent to 3 or 4 inches of water. On the upper Youghiogheny, in higher elevations, there was considerable snow, but in the Tygart and West Fork Basins in West Virginia the snow was negligible.

Ice continued in the Ohio River until about the 13th when navigation, which had been suspended since January 18, was resumed. A moderate rise occurred in the lower reaches on February 11 but did not reach flood stage.

Pacific slope drainage.—Kings River reached flood stage for a short time on February 26 and moderately high stages continued in all streams of the southern San Joaquin Basin during the remainder of the month. No damage occurred although excess waters emptying into Tulare Basin threatened levees of some reclaimed areas. At mountain stations in this area the February precipitation was slightly more than twice the February normal and at most points the seasonal total to the end of February was above normal for the entire season.

In the Sacramento River Basin proper frequent heavy rains during the month kept the streams at high levels, developing into a flood of great proportions at the close of the month. A report will be made on this flood at a later date.

TABLE OF ESTIMATED FLOOD LOSSES

Drainage and river	Tangible property	Matured crops	Prospective crops	Livestock and other movable farm property	Suspension of business	Total
Atlantic slope drainage: Savannah River					$500	$500
East Gulf of Mexico drainage:						
Apalachicola River				$350	1,800	2,150
Choctawhatchee River	$12,000	$3,500		1,000	2,000	18,500
Tombigbee River	2,200		$750	500		3,400
Pearl and Pascagoula Rivers	250				3,000	3,250
Ohio River Basin: Allegheny River	300					300
Pacific slope drainage: Eel River	455,000	500	20,000	1,000	10,000	486,500

One of the three greatest floods of record occurred in the Eel River Delta from February 27 to 29 as the result of heavy rains during the night of the 26th. At Dos Rios, Calif., the river rose 30 feet in 24 hours to a stage of 38.9 feet at 8 a. m. on the 27th and to 45.4 feet in the next 24 hours. A crest stage of 24.4 feet was reached at Fern-